SCHEME OF EXAMINATION FOR ELECTRICAL ENGINEERING.

| Number of papers | Particulars | Paper | Oral and Practical | Record |
|---|---|---|---|---|
| 4 | *Common* — Integral and Differential Calculus ... / Statics, Dynamics, and Hydrostatics ... / Applied Mechanics ... ... / Graphic Statics ... ... | 280 | .. | 70 |
| 5 | Hydraulics and Hydraulic Machinery ... ... | 100 | ... | 30 |
| 6 | Mechanical Engineering ... ... | 100 | ... | 25 |
| 7<br>8<br>9 | Electrical Engineering ... ... | 250 | ... | 100 |
| 10 | Drawing ... ... ... | 100 | ... | 100 |
| 11 | Estimating, Specifications and Engineering Economics. | 100 | ... | 30 25* |
| 12 | Workshop and Mechanical Laboratory... ... | ... | 70 | 60 |
| 13 | Electrical Laboratory ... ... ... | ... | 80 | 80 |
| | Total ... | 930 | 150 | 520 |
| | | | | 1600 |

11 Papers.
*1 Essay Paper.

12 Papers (Theory) and 2 Practical.

(*G. O. No. E.* 3394—*Edn.* 76-26-9, *dated the* 23*rd December* 1926).

*Notification No.* 11529, *dated the* 6*th January* 1927.

The footnote under Ordinance 98 (page 48 of Calendar, Vol. I for 1926-27) has been amended as under :—

Substitute the word "ten" for the word "five" in line 3.

The footnote when amended will read as follows :—

"Students belonging to the Depressed Classes shall be exempted from payment of application fees in respect of examinations conducted by the University for a period of ten years from 1922".

—(*Government Order No E.* 3489-90—*Edn.* 52-26-6, *dated the* [illegible] 1927.)

B. M. SRIKANTIA,
*Registrar.*

## EDUCATION DEPARTMENT.

### OFFICE OF THE INSPECTOR-GENERAL OF EDUCATION IN MYSORE, BANGALORE.

MYSORE LOCAL EXAMINATIONS.

*Notification D. No.* 68, *dated* 30*th December* 1926.

The following revised syllabuses in Mathematics and Physics and Chemistry for the Vernacular Upper Secondary Examination are issued in modification of the syllabuses in these subjects published in Notification D. No. 43, dated the 15th October 1924. The Upper Secondary Examination of 1928 will be conducted according to the revised syllabuses.

I. REVISED SYLLABUSES IN MATHEMATICS FOR VERNACULAR UPPER SECONDARY EXAMINATION.

(1) *Arithmetic.*

The first four rules: Contracted methods of multiplication and division; Factors; G. C. M. and L. C. M; Relation between G. C. M. and L. C. M.

Fractions: Vulgar and Decimal; Recurring and non-recurring decimals; Conversion of vulgar fractions into decimals and *vice versa*; Addition, subtraction, multiplication and division of fractions; Problems involving fractions; Approximations to three places of decimals.

Metric System.

Simple and Compound practice.

Ratio: Simple and compound proportion, Proportional parts; Square root of integers and fractions, Cube root by inspection.

Square measure: Area of triangles, rectangles, squares and circles.

Cubic Measure: Volume of simple solids like the Cube, parallelopiped, cylinder, cone and prism.

Averages Percentages, Mixtures: Exchange, Partnership.

Profit and Loss.

Simple and compound interest (examples in compound interest to be simple).

Present worth and Discount: Bankers and True Discount.

Stocks and Shares.

Problems on Time and Distance and on Time and Work.

Statistical graphs.

(2) *Algebra.*

Symbolical expressions of arithmetical results.

Addition, subtraction, elementary laws of integral indices, multiplication and division.

Use of brackets.

Simple equations and easy problems leading thereto.

Easy factorization based on grouping; factorization of the type

$ax^2 + bx + c$ by inspection.

Identities for $(a+b)^2$, $(a^2-b^2)$, $(a+b)^3$, $(a^3+b^3)$ $a^3+b^3+c^3-3abc$.

Simultaneous equations of the first degree in two unknowns and easy problems leading thereto.

(3) *Geometry*

1. Introductory—Elementary notions of solids, surface, lines, and points as illustrated from a cube, a pyramid, a prism, a cone and a cylinder.

Use of the following mathematical instruments.

Foot rule, compasses, protractor, set squares.

2. Problems 1 to 19 and Theorems 1 to 30 as in Hall and Steven's School Geometry

3. Describing intersecting circles and circles touching one another. Inserting chords of given length in a circle. Drawing tangents to a circle from a given point and direct and transverse common tangents to two circles.

(Formal proof not necessary in Section 3).

ALLOTMENT OF TIME.

| | |
|---|---|
| Arithmetic and Algebra | 4 periods per week |
| Geometry | 2 do |

II. PHYSICS AND CHEMISTRY FOR VERNACULAR

FOR SECONDARY EXAMINATION.

(N.B.—References by Chapters and Paragraphs are given from 'Experimental Science for Indian Schools' by Gregory and Hodges with a view to indicate scope of the syllabus).

(1) *Physics.*

1. Measurement of length, area and volume. Measurement of time: laws of the simple pendulum treated experimentally. (Chapter I).

2. Uniform motion in a straight line. Motion of bodies in a straight line under the action of gravity. (Chapter VII—Paras 1 to 8).

3. Use of the common balance and the spring balance. Distinction between mass and weight; density and specific gravity. (Chapter II).

4. Liquid pressure, the hydraulic press, principle of Archimedes. Methods of determining specific gravity. Nicholson's hydrometer, the common hydrometer. (Chapter III—Paras 15 to 18 and Chapter IV).

5. Weight of Air, atmospheric pressure, barometer, action of the common air pump and the syphon. (Chapter V, omitting paras 14, 15, 16 and 17).

6. Expansion of solids, liquids and gases when heated; the mercury in glass thermometer the clinical thermometer. (Chapter IX).

7. Change of state, melting and boiling points, latent heat of fusion of ice, latent heat of steam. The lowering of the boiling point of water in higher altitudes, specific heat, determination of specific heat by the method of mixtures (Chapter X).

8. Simple experiments illustrating conduction, convection and radiation of heat. (Chapter XI—Paras 1 to 10)

9. Sound takes time to travel. Velocity of sound in solids, liquids and gases. Distinction between pitch and intensity of sounds. Echoes. (Chapter VI: teacher should supplement information on echoes.)

10. Light travels in straight lines; pin-hole camera, reflection of light from a plane mirror, concave and convex mirrors; refraction of light; the path of a ray of light in a prism. Action of a convex lens, the photographic camera. The microscope and the telescope; elementary notions of the action of the eye. Decomposition of white light by a prism. Colour. (Chapter XII; teacher should supply information regarding action of the eye).

11. Action of lodestone; permanent and temporary magnets; the earth as a magnet; the mariner's compass. (Chapter XIII, paras 1 to 14).

12. Production of electricity by friction; positive and negative electrification, conductors and insulators; electric induction; the electrophorus; the Leyden Jar. (Chapter XIV).

13. The simple voltaic cell; Daniell's Cell; action of a wire carrying a current on a magnetic needle; the simple galvanometer; the heating action of a current; the electric glow lamp; decomposition of water and a solution of copper sulphate by electric current; electric bell and electric telegraphy. (Chapter XIII—Paras 16 to 29 and Paras 34 and 35).

(2) *Chemistry.*

1. Methods of separating constituents of mixtures such as sand and sugar, sulphur and iron filings etc., (Chapter XV). Distinction between mechanical mixtures and chemical compounds. (Chapter XVII—Paras 12 to 19).

2. Action of heat on red oxide of mercury and lead nitrate; action of sodium and potassium on water. Chemical combination illustratrd by the burning of sulphur in air; magnesium burning in air; sulphur combining with iron; quick-lime combining with water. Study of (1) the burning of candle in air, (2) rusting of iron, (3) composition of air. Preparation and properties of oxygen and hydrogen. Analysis and synthesis of water. (Chapters XVI, XVII and XVIII—For action of sodium and potassium on water *vide* Chapter XXIV).

3. Temporary and permanent hardness of water; properties of solution, acids and bases. (Chapter XX—Paras 24 to 26 and Chapter XXIII).

4. Carbon, its occurrence, properties, and importance in natural processes. Carbonic acid gas, its occurrence, preparation and properties, action of green plants and sunlight on carbon dioxide in air; properties of water containing dissolved carbon dioxide. (Chapter XX).

5. Nitrogen and nitric acid, preparation and properties. (Chapter XXII Paras 5, 6 and 7).

6. An elementary study of the preparation and properties of—

(1) Silicon, chlorine, phosphorus, sulphur.

(2) Hydrochloric Acid, Sulphuric acid and Ammonia. (Chapters XIX, XXI and XXII; information regarding Silicon to be supplemented).

7. An experimental study of iron, copper, lead, aluminium, mercury, calcium, zinc and tin. (Chapter XXIV).

K. MATTHAN,
*Inspector-General of Education.*

## FINANCIAL DEPARTMENT.

### Requesting a statement of unadjusted advances and unremedied objections to be attached to the report of transfer of charge.

COMPTROLLER'S OFFICE, BANGALORE.

*Circular No.* 81—G.A.D., *dated 8th January* 1927.

To

All Drawing and Countersigning Officers.

Sir,

I have the honor to state that as per Article 72 (3), Mysore Account Code, Volume I (Article 62 (3) of the revised Mysore Civil Account Code, Volume I) every Officer who is responsible for the adjustment of advances and who is transferred to another office before fully accounting for the amounts outstanding against him should leave a memorandum clearly explaining the state of accounts for the information and guidance of his successor, and attach a statement of unadjusted advances and unremedied objections to the report of transfer of charge. At present such statements are not received from all officers. It is requested that the statement in the prescribed form should be sent invariably along with the charge reports in all cases of transfer. Whenever there is no unadjusted advance, or unremedied objections, *nil* statements should be sent.